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EXAMINER	
SHANG, ANNAN Q	
ART UNIT	PAPER NUMBER
2614	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/602,512	RAKIB ET AL.	
	Examiner	Art Unit	
	Annan Q Shang	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by **Laubach et al (6,081,533).**

As to claim 1, note the **Laubach et al** reference figures 1, 2 and 7, disclose method and apparatus for an application interface module (AIM) for managing information to/from a subscriber terminal and cable television headend unit and further discloses a head end apparatus for cable television operator. The claimed apparatus comprising...is met as follows: Headend 201 receives one or more inputs streams of MPEG or other compressed plurality of video/audio data, "programs and/or services" encoded in ATM packets, note figures 1, 2 and col. 4, lines 19-67; the claimed "one or more transmitters, transceivers or modems..." is/are met Receivers (Rec) 706 or Transmitters (Tra) 713 or Fiber Terminal (FT) 205, note figures 2, 7 and col. 11, lines 1-25, note that each Rec/Tra 706/713 or FT 205, have an output coupled to a transmission medium 701/703 or 209, "downstream" and an input for receiving ATM packets "a stream of packets" containing data encoded one or more video/audio data and other control data to be used with the video/audio data, note that the ATM cells

includes control data; the claimed "pull multiplexer..." is met by Headend Communications Controller (HCX) 103 at Headend 201, note col. 5, lines 22-50, col. 11, lines 1-25 and col. 16, lines 37-64, note that HCX 103 is coupled to receive upstream VOD program requests via the user remote control and receives ATM streams "one or more streams" of compressed data packets and outputs each ATM streams "data packets" containing data encoding one or more requested VOD programs to the input of Rec/Tra 706/713 or FT 205; HCX 103 includes Common ATM Switch Fabric "a programmed computer" note figures 7 and 8, to map VOD requested programs to program identifier codes, IP addresses or other identifying information that is used by the "culling switches," inherent to ATM Switch Fabric of HCX Controller 103, to select "cull out" data packets from the streams of compressed data packets received at the one or more inputs that contain data encoding the requested VOD program(s), note col. 11, lines 1-62 and col. 16, lines 37-64.

As to claim 2, Laubach further discloses HCX Controller 103 that facilitates communications, both upstream and downstream, and also responsible for all bandwidth management and all resource management, including modulation, frequency, bandwidth and power assignment, note col. 4, lines 19-48.

As to claim 4, Laubach further discloses HCX Controller 103 comprises means for bandwidth management to insure that the output stream(s) of data packets at the one or more outputs do not consume more than is available on the downstream transmission medium, note col. 4, lines 19-48.

As to claim 5, Laubach further discloses HCX Controller 103 further comprises means for managing the output streams for maximum efficiency in transmitted requested programs and services so that as many requests as possible from customers as possible can be fulfilled, note col. 4, lines 19-48 and col. 7, lines 1-32.

As to claim 6, Laubach further discloses HCX Controller 103 further comprises ATM Switch Fabric "means for assembling data packets" that comprise the output streams such that all the data packets that encode requested programs and services and associated data to be viewed and/or used at any particular STU 106 are transmitted to the customer on a number of channels equal to or less than the number of tuners the STU 106 has, note col. 4, lines 43-63, col. 11, lines 1-25 and col. 12, line 1-17, note that STU 106 is a gateway that connects other home devices, all of which can receive information from Headend 201 and as such the Headend organizes the output data streams such that the of channels to send VOD programs is less or equal the number of tuners connected to STU 106.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Laubach et al (6,081,533)** in view of **Schneidewend et al (6,249,320).**

As claims 7 and 8, **Laubach** teaches all the claimed limitations as previously discussed with respect to claim 1, and further teaches HCX Controller 103 comprises a programmed microprocessor that functions to optimize the assembly of output streams of data packets by analyzing the number of requests for the VOD programs and services from the STU 106 and the number of tuners the STU 106 has, and current availability of channels and attempts to create the output streams of data packets so that all the data packets encoding the programs and services, each particular customer of STU 106 requested are transmitted on a number of channels does not exceed the number of tuners the STU 106 has, note col. 4, lines 43-63, col. 11, lines 1-25 and col. 12, line 1-17, note that STU 106 is a gateway that connects other home devices all of which can receive information from Headend 201 and further HCX Controller 103 of the Head end facilitates communications, both upstream and downstream channels, and also responsible for all bandwidth management and all resource management, including modulation, frequency, bandwidth and power assignment, note col. 4, lines 19-48, organizing the output data streams such that the of channels to send VOD programs is less or equal the number of tuners connected to STU 106,

Laubach fails to specifically teach current availability of subchannels on one or more logical channel and attempts to create the output streams of data packets so that all the data packets encoding the programs and/or services, each particular customer requested are transmitted on subchannels on a number of logical channels that does not exceed the number of tuners the customer has, and further fails to specifically teach "attempting to move or combine data being transmitted to other customers on other

available subchannels of one or more other logical channels so as to make enough subchannels available on a number of logical channels equal to or less than the number of tuners each particular customer has, such that all data of programs and/or services requested by that customer can be transmitted on a number of logical channels equal to the number of tuners the customer has. However since Laubach teaches communications management, both upstream and downstream channels, and also all bandwidth management and all resource management, including modulation, frequency, bandwidth and power assignment, it would have been obvious to one of ordinary skill in the art to incorporate Laubach various channel management into managing subchannels for the advantages as taught by Laubach.

Laubach fails to specifically teaches transmitting the requested VOD programs and services in subchannels.

However, note **Schneidewend et al** reference figures 11-13, teaches system and method for transmitting programs in major and minor channels or channels (12 NBC) and subchannels (12-1 NBC SPORTS), FOOTBALL, NBC MOVIES, etc., note figure 12, col. 4, lines 12-30 and col. 11, lines 23-66.

Therefore it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Schneidewend into the system of Laubach on order to transmit requested programs in channels and/or subchannels and apply the various management control information as taught by Laubach, to the various subchannels in order to manage or control the programs transmitted in the subchannels to enable the customer's receiving unit to retrieve information accordingly.

As to claim 9, note **Laubach et al** reference figures 1, 2 and 7, disclose method and apparatus for an application interface module (AIM) for managing information to/from a subscriber terminal and cable television headend unit and further discloses head end for a cable TV system. The claimed system comprising...is met as follows: the claimed "a head end cherry picker multiplexer..." is met by by Headend Communications Controller (HCX) 103 at Headend 201, note figures 2, 7, col. 5, lines 22-50, col. 11, lines 1-25 and col. 16, lines 37-64, note that HCX 103, have plurality inputs 710, 711, 712 and 714, to receive input data streams from one or more video servers, WAN servers, and/or Voice Interface "T-Carrier interface circuitry or telephone company digital switches" and having one outputs 709, 715 and 716, at each of which generated an output data streams and further comprising Common ATM Switch Fabric "culling means" for receiving upstream VOD program requests via the user remote control from one or more users and mapping the upstream VOD programs and services requests to program identifier codes, IP addresses or other identifying information and for encoding "communicating" the program identification codes to one or more video servers to cause them to output the requested VOD program data, where the ATM Switch Fabric of HCX Controller 103, uses the packet identifying information to select "cull out" data packets from the streams of compressed data packets received at the one or more inputs that contain data encoding the requested VOD program(s) to generate one or more output streams, note col. 11, lines 1-62 and col. 16, lines 37-64; the claimed "bank of one or more cable modems..." is/are met Receivers (Rec) 706 or Transmitters (Tra) 713 or Fiber Terminal (FT) 205, note figures 2, 7 and col. 11, lines 1-

25, note that each Rec/Tra 706/713 or FT 205, have an output coupled to a transmission medium 701/703 or 209, "downstream" and an input for receiving ATM packets "a stream of packets" containing data encoded one or more video/audio data and other control data to be used with the video/audio data, note that the ATM cells includes control data, each Rec/Tra 706/713 or FT 205, modulating the different program(s) and service(s) encoded in the data packets of the output stream received from the HCX Controller 103 onto one or more channels, note figure 7 and col. 11, lines 1-25.

Laubach fails to specifically teach a bank of modem couple to a multiplexer to received one or more control messages from the multiplexer indicating upon which subchannel(s) the data packets encoding one or more requested VOD programs "program(s) and service(s)" are to transmitted.

However, note **Schneidewend et al** reference figures 11-13, teaches system and method for transmitting and displaying major and minor channel numbers or channels (12 NBC) and subchannels (12-1 NBC SPORTS), FOOTBALL, NBC MOVIES, etc., are messages displayed, to indicate to the user where to retrieve information, note figure 12, col. 4, lines 12-30 and col. 11, lines 23-66.

Therefore it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Schneidewend into the system of Laubach on order to provide information to a viewer to enable the viewer to tune to appropriate channel for the requested information or VOD program.

As to claim 10, Laubach further discloses where the Common ATM Switch Fabric includes a microprocessor programmed to receive upstream packet data other than requests for programs and services and route the upstream data to appropriate WAN server and Voice Interface 714 or telephone company digital switch, note figures 7, 8 and col. 11, lines 1-25.

Claim 11 is met as previously discussed with respect to claim 4

Claim 12 is met as previously discussed with respect to claims 7 and 8.

As to claim 13, note **Laubach et al** reference figures 1, 2 and 7, disclose method and apparatus for an application interface module (AIM) for managing information to/from a subscriber terminal and cable television headend unit and further discloses a head end multiplexer system for a central office of a DSL system. The claimed system comprising...is met as follows: the claimed "one or more video inputs..." is met by Video Interface (Vid-Int) 712, note figure 7, note that Vid-Int 712 is an interface that receives streams of video data from a video server; the claimed "one or more IP inputs..." is/are met by Ethernet Interfaces (Et-Int) 710 and 711, note col. 7, lines 1-62, note that Et-Int(s) 710 and 711 are inputs for receiving streams of IP packets from a server, router or gateway coupled to the wide area network (WAN); the claimed "one or more wideband inputs for receiving telephony packets..." is/are met by Voice Interface (Voi-Int) 714, note that Voi-Int 714 receives packets containing digital data from an interface of a wide band digital network such as T-Carrier system or X.25 packet network, note col. 4, lines 9-48; note also that Voi-Int 714 are inputs for receiving plain old telephone analog signals from a POTs switch in a public service telephone network;

the claimed "one or more upstream inputs..." is/are met by Receivers (Rec) 706 or Fiber Terminal (FT) 205, note figures 2, 7 and col. 11, lines 1-25, note that each Rec 706 or FT 205, receives upstream VOD program and service requests and upstream data from the STU(s) 106; the claimed "one or more culling switch means..." is/are met by Common ATM Switch Fabric (CATMSF) of HCX Controller 103, note that CATMSF is a selecting means "culling means" selecting packets at video inputs 712 and the Voi-Int 714 "wide band inputs" in accordance with selection criteria given CATMSF and organizing the resulting selected packets into one or more ATM streams of packets, each containing the data encoding programs and services requested by the user(s) at the customer premises; the claimed "control means..." is inherent to the CATMSF, note figure 8, note col. 7, lines 1-62 and col. 16, lines 25-64, note that CATMSF receives upstream VOD program and service requests via Rec 706 or 708 from users at all STU(s) 106 "customer premises" and generates the selection criteria for VOD programs and services requested from each STU(s) 106 from the upstream received VOD program requests and also generates control data "management" for transmission to each STU 106 on the Et-Int(s) 710 and 711 via a DSL line 1704 and 1706 coupled to STU 106 and the HCX Controller 103 at the head end, note figures 7, 16, 17 and col. 16, line 65-col. 17, line 1+; the claimed "one or more DSL modems..." is/are met by Et-Int(s) 710 and 711, note col. 16, line 65-col. 17, line 1+, note that Et-Int(s) 710 and 711, each have an output coupling to a DSL line coupling the HCX Controller 103 of the Head end to one STU 106 having one or more inputs for coupling to receive one of the output data streams from the CATMSF and to receive control data "management

messages" for transmission to the STU 106 the DSL modem coupled to via a DSL line 1704 and 1706, and where each DSL modem have inputs for coupling one of POTS inputs and one or more outputs coupled to upstream inputs of a control computer inherent to the HCX Controller 103 of the Head end and further each DSL modem having circuitry for transmitting data encoding one or more requested VOD programs and services on one or more channels of the DSL line, note col. 17, lines 31-66, note also that HCX Controller 103 of the Head end or Central Office 1705 inherently includes routing circuitry including a microprocessor coupled to the upstream inputs for receiving upstream data packets and programmed to analyze the destination of each upstream data packet and route it to a WAN gateway or server or T-Carrier interface circuitry.

Laubach fails to specifically teach control means for transmitting control messages to each STU indicating which logical channel(s) and subchannels on the DSL line on which the requested programs will be found and also which channels and subchannels on which the VOD programs and services requested by a particular STU will be transmitted on a DSL line coupled to the Head end and the STU(s).

However, note **Schneidewend et al** reference figures 11-13, teaches system and method for generating management and control messages for controlling the channels and subchannels and displaying major and minor channel numbers or channels (12 NBC) and subchannels (12-1 NBC SPORTS), FOOTBALL, NBC MOVIES, etc., are messages displayed, to indicate to the user where to retrieve information, note figure 12, col. 4, lines 12-30 and col. 11, lines 23-66.

Therefore it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Schneidewend into the system of Laubach and further modify these teaching with DSL in on order to provide information to a viewer to enable the viewer to tune to appropriate channel for the requested information or VOD program.

As to claim 14, Laubach further teaches HCX Controller 103 comprises a programmed microprocessor that functions to optimize the assembly of output streams of data packets by analyzing the number of requests for the VOD programs and services from the STU 106 and the number of tuners the STU 106 has and bandwidth availability on the bi-directional channel and the wideband channel of the DSL line and generating selection criteria so that, as many times as possible the requested program(s) and/or service(s) are sent on a number of channels that do not exceed the number of tuners the customer has, note col. 11, lines 1-25 and col. 16, line 65-col. 17, line 1+, note that STU 106 is a gateway with connects other home devices all of which can receive information from Headend 201 and further the Head end facilitates communications, both upstream and downstream, and also responsible for all bandwidth management and all resource management, including modulation, frequency, bandwidth and power assignment, note col. 4, lines 19-63, organizing the output data streams such that the of channels to send VOD programs is less or equal the number of tuners connected to STU 106.

As to claim 15, Laubach inherently teaches HCX Controller 103 that includes bandwidth recoders that receive output data streams from CATMSF and alter the

bandwidth of the output stream in accordance with instructions and further analyzes the bandwidth availability on the customer's DSL line and controls the bandwidth recoders accordingly, note col. 11, lines 1-25 and col. 16, line 65-col. 17, line 1+, note that HCX 103 at the Head end facilitates communications, both upstream and downstream, and also responsible for all bandwidth management and all resource management, including modulation, frequency, bandwidth and power assignment, note col. 4, lines 19-63.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Laubach et al (6,081,533)** in view of **Schneidewend et al (6,249,320)** as applied to claim 1 above, and further in view of **Li et al (6,543,053)**

As to claim 3, Laubach further discloses HCX Controller 103 that includes ATM Switch Fabric "culling switch circuitry" to select data packets defining one or more output streams for transmission on one or more channels carry compressed video packets and organizing the selected compressed video packets into one or more output data streams and selecting not only video packets encoding requested VOD programs but also selects compressed video packets of popular programs regardless of whether there are any request for the programs and organizing both the requested and the programs into one or more output data streams for transmission over the HFC on one or more channels, note col. 5, lines 21-51, note that Laubach teaches filtering and restricting packet flow to subscribers and controlling the transmission of video data however fails to specifically subchannels carry data encoding popular programs and/or services.

However **Schneidewend et al**, teaches system and method for transmitting programs in major and minor channel numbers or channels (12 NBC) and subchannels (12-1 NBC SPORTS), FOOTBALL, NBC MOVIES, etc., note figure 12, col. 4, lines 12-30 and col. 11, lines 23-66.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Laubach with the teaching of Schneidewend to utilize bandwidth efficiently by splitting 6 MHz bandwidth (allocated to television broadcast channels) into channels and subchannels, for transmission of programs and further to enable broadcasters to still maintain brand identity, e.g. Fox 5, Channel 13, etc.,

Laubach as modify by Schneidewend fail to teach given priority to popular programs and selecting popular programs regardless of whether there are any request for the programs and organizing both requested programs into one or more streams.

However, note **Li et al** reference figure 2, teaches a VOD services that assigns different retrieval time for both regular and popular programs and organizes these programs for transmission to the subscribers, note col. 8, lines 20-24, line 49-56 and col. 13, line 34-col. 14, line 18.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Li into the system of Laubach as modify by Schneidewend in order to provide higher priority to popular programs and offer better services to the users.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fijolek et al (6,553,568) disclose methods and systems for service level agreement enforcement on a data-over cable system.

Dillon (6,571,296) discloses apparatus and method for Hybrid network access.

Datari (6,418,169) discloses system for prioritizing bi-directional broadcast data.

Willis et al (6,385,647) disclose system for selectively routing data via either a network that supports Internet protocol or via satellite transmission network based on size of the data.

Fischer et al (6,360,075) disclose system and method for transmitting data.

Dunn et al (6,154,772) disclose system and method for the delivery of digital video and data over a communication channel.

Adams et al (5,819,036) disclose method for message addressing in full service network.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q Shang** whose telephone number is **703-305-2156**. The examiner can normally be reached on 700am-500pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W Miller** can be reached on **703-305-4795**. The fax phone numbers for the organization where this application or proceeding is assigned are **703-746-5991** for regular communications and **703-746-5991** for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service whose telephone number is **703-306-0377.**

Annan Q. Shang
July 10, 2003

JOHN MILLER
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